and a small cell base station/wireless access point to a second local area radio network. The user equipment may operate in the local area radio network using one or more Internet Protocols for networking and cellular defined interfaces and radio protocols, such as standards defined by the Third Generation Partnership Project (3GPP) and the like, to operate in the local area network. The local area network connection may also serve as a sub-network, a sub-system, and/or a local network domain in the interconnected networks, such as the Internet or Intranet.

[0020] To manage radio connections, the user equipment may establish an entity to manage the connection established in the local area radio network to the small cell base station/wireless access point. For example, the user equipment may establish a Radio Resource Control (RRC) protocol or another RRC-protocol like entity to manage the radio connection(s) for the local area radio network. This established local area RRC protocol entity may be established within a single RRC protocol layer together with, or as a sub-entity of, the EPS RRC-protocol layer. This local area RRC-protocol entity may be established, when there is a connection available from the user equipment to the small cell base station in the local area radio network. If the user equipment disconnects from the local area radio network, the established local area RRC protocol entity may be terminated, but the user equipment may maintain the RRC protocol entity for the EPS.

[0021] In some example embodiments, the user equipment includes a service access point that interfaces the RRC protocol entity for the local area radio network (also referred to as the local area RRC entity and local area RRC protocol entity) with the RRC protocol entity for the EPS (also referred to as EPS RRC entity and EPS RRC protocol entity). Moreover, the service access point (SAP) may be established and configured within a single RRC protocol layer as noted above. Furthermore, the service access point may define how the local area RRC entity is created (SAP opened) and/or terminated (SAP closed). Once the second, local area RRC entity, is established, that service access point may also provide services to the EPS RRC entity, such as delivering, routing, and/or embedding EPS RRC protocol messages via the local area network connection. The service access point may also act as the interface for interaction between the local area RRC entity and the EPS RRC entity. This interface allows the local area RRC entity to send, and/or receive RRC messages locally from/to the EPS RRC entity, and also to exchange configurations or related information with the EPS RRC entity.

[0022] Before providing additional examples regarding the service access point, local area RRC entity, and the EPS RRC entity, the following provides an example of a system framework in which some of the example embodiments described herein may be implemented.

[0023] FIG. **1** depicts a system **100** according to some example embodiments. System **100** may include one or more user equipment, such as user equipment **114**A-B, one or more wireless access points, such as base stations **110**A-C. In some example embodiments, base station **110**A may serve a cell, such as macrocell **112**A, several cells, cell sectors, and/or multiple cells on different carrier frequencies, and base station **110**B may serve a local area radio network, such as small cell **112**B, although base station **110**B may serve other types of cells as well. Moreover, the base stations may have wired and/or wireless backhaul links to other network nodes, such as a mobility management entity **199**, other base stations, a radio network controller, a core network, a serving gateway, and the like.

[0024] In some example embodiments, user equipment **114**A-B may be implemented as a user equipment and/or a stationary device. The user equipment **114**A-B are often referred to as, for example, mobile stations, mobile units, subscriber stations, wireless terminals, tablets, smart phones, pads, communicators or the like. A user equipment may be implemented as, for example, a wireless handheld device, a wireless plug-in accessory, or the like. In some example embodiments, user equipment may include a processor, a computer-readable storage medium (e.g., memory, storage, and the like), a radio access mechanism, and/or a user interface.

[0025] In some example embodiments, the user equipment **114**A-B may be implemented as multi-mode user devices configured to operate using a plurality of radio access technologies. For example, user equipment **114**B may be configured to operate using a plurality of radio access technologies including one or more of the following: Long Term Evolution (LTE), wireless local area network (WLAN) technology, such as 802.11 WiFi and the like, Bluetooth, Bluetooth low energy (BT-LE), near field communications (NFC), and any other radio access technology including other 3GPP radio access technologies (e.g., GERAN, WCDMA, HSPA, LTE, LTE-Advanced, IMT, IMT-A, and the like).

[0026] One or more of the base stations **110**A-C may, in some example embodiments, be implemented as an evolved NodeB (eNB) type base station, although other types of radio access points may be implemented as well. When the evolved NodeB (eNB) type base station is used, the base stations may be configured in accordance with standards, including the Long Term Evolution (LTE) standards, such as 3GPP TS 36.201, Evolved Universal Terrestrial Radio Access (E-UTRA); Long Term Evolution (LTE) physical layer; General description, 3GPP TS 36.211, Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation, 3GPP TS 36.212, Evolved Universal Terrestrial Radio Access (E-UTRA); Multiplexing and channel coding, 3GPP TS 36.213, Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures, 3GPP TS 36.214, Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer—Measurements, TS 36.300, protocol specifications like TS 36.321, TS 36.322, TS 36.323, TS 36.331, and any subsequent additions or revisions to these and other 3GPP series of standards collectively referred to as the LTE standards.

[0027] One or more of the base stations **110**A-C may, in some example embodiments, be configured to serve small cells using a WLAN technology, such as WiFi (e.g., the IEEE 802.11 series of standards), and any other local area radio access technology. For example, base station **110**B may, in some example embodiments, be implemented to a serve local area radio network, such as small cell **112**B. Moreover, base station **110**B may be configured to operate with a plurality of radio access technologies including one or more of LTE, WiFi, BT-LE, and/or any other wireless local area network standard. In some example embodiments, the base station **110**B may be implemented as a home evolved NodeB (HeNB) base station serving small cell **112**B, which covers a structure or a predefined area, such as a home, an office building, and the like.